NavMed P-369

UNITED STATES NAVY

MEDICAL NEWS LETTER

Vol. 41 Friday, 7 June 1963 No. 11

TABLE OF CONTENTS

MEDICAL NEWS LETTER

Vol. 41 Friday, 7 June 1963 No. 11

Policy

The U. S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be, nor are they, susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

Change of Address

Please forward changes of address for the News Letter to: Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md., giving full name, rank, corps, and old and new addresses.

The issuance of this publication approved by the Secretary of the Navy on 28 June 1961.

Hydrocephalus and Its Treatment

By LCDR F. E. Glasauer MC USN. From the Proceedings of Monthly Staff Conferences of the U. S. Naval Hospital, NNMC, Bethesda, Md., 1961 - 1962.

Hydrocephalus is a very old but also very frustrating problem to the neurosurgeon. Many newcomers to the field of neurosurgery become interested in its problems and take up the challenge of its treatment. Their interest is reflected quite obviously in the quantity and variety of procedures developed. Hydrocephalus can be classified simply into two groups: noncommunicative or obstructive, and communicative.

A. The noncommunicative or obstructive hydrocephalus can be caused by cysts or tumors within or in close vicinity of the ventricular system, by atresia or stenosis of the aqueduct of Sylvius, by cyst formation or adhesive bands at the outflow of the fourth ventricle (foraminae of Luschka and Magendi), or by the presence of an obstructive lesion at the basal cisterns and the tentorial notch (craniopharyngioma). The dilation of the ventricle always occurs proximal to the site of obstruction. Therefore, a tumor in the lateral ventricle itself or at the foramen of Monroe will lead to enlargement of the lateral ventricle. Tumors within the third or in the proximity of the posterior third ventricle (Pinealoma) will cause dilatation of the third and both lateral ventricles. Aqueductal stenosis will have the same effect. Obstruction at the outflow of the fourth ventricle and in the cisterna magna will be followed by dilatation of the whole ventricular system.

B. The communicative hydrocephalus is either due to an overproduction of cerebrospinal fluid (CSF), for which only one true cause is known: that is a papilloma of the choroid plexus, or lack of, or inadequate absorption of the CSF, which is either congenital or postinfectious. It can also develop following trauma or bleeding.

TREATMENT

A. The noncommunicative type of hydrocephalus can frequently be treated successfully by operative removal of the obstructive lesion, or if this is not feasible, by performing a by-pass procedure then a ventriculocisternostomy or Torkildsen procedure. The by-pass will fail to work, however, if there is an obstruction at the tentorial notch.

B. Communicative hydrocephalus. The papilloma of the choroid plexus can also be dealt with by surgical removal.

1. Medical Treatment: So far, only Diamox has been used. Diamox has inhibitory effect on carbonic anhydrase. Its renal effect is diuresis. In the brain it supposedly diminishes the rate of CSF formation and its interstitial fluid. The recommended dosage was 5 mg/kg up to 1. Gm/day. Only a few effective cases were reported. It has not been broadly used or advocated.

2. Surgical Treatment: As a direct attack, attempts of removal and/or coagulation of the choroid plexus were made. In order to avoid collapse of the ventricle during the procedure, a ventriculoscope was developed for cauterization of the choroid plexus. But as the choroid plexus is present in more than one ventricle, multiple procedures were necessary for this treatment to be effective. In addition, the technical difficulty of the approach discouraged common acceptance of this procedure.

The last two means described were aimed primarily at reducing the amount of CSF. The following attempts are aimed at shunting the abundant CSF for absorption, within the head, into other body cavities, outside the body, and last, into the vascular system.

3. Attempts to establish communication within the head: The lateral ventricle and the subarachnoid space were connected by means of cortical openings, mushroom shaped catheters or special cannulas. The same methods were used for ventriculo-subdural shunts. Ventriculostomy (an opening in the anterior third ventricle and lamina terminalis) was advocated by Scarf, but these openings rarely lasted and became occluded by adhesions. Another idea was to lead the CSF for absorption into the temporal muscle and the subcutaneous tissue of the scalp. The fatty tissue of the orbit was used for the same purpose. Attempts at shunting the CSF into the venous sinus and into the internal jugular vein by means of homografts were made as early as 1908 by Payr and by Haynes in 1913. The ventriculo-mastoid shunt was advocated by Nosik in 1950. This procedure, however, was jeopardized by the frequency of recurrent ear infections in children.

4. Abdominal cavity: Ferguson, in 1898, attempted to shunt the CSF into the peritoneal cavity. He passed a U-shaped silver wire from the lumbar subarachnoid space through a drill hole of the fifth vertebral body into the peritoneum. In 1905, Nicoll attempted a shunt by attaching the omentum, which was brought through a paravertebral opening, to a defect in the spinal dura. Also, in 1905, Kausch performed a ventriculo-peritoneal shunt by passing a rubber tube from the ventricle to the peritoneum and Hartwell used a silver wire for the same purpose. Cushing utilized a silver cannula which passed through the fourth lumbar vertebra into the peritoneal cavity. Further attempts were made with silk threads, vein grafts, and rubber tubes from the lumbar dura to the peritoneal cavity.

In 1951, Cone, Lewis, and Jackson readvocated the ventriculo-peritoneal and the peritoneal-lumbar subarachnoid shunts. Polyethylene tubing was used then. But a high frequency of obstruction of the shunting tubes by adhesions and exudates still existed, and in an attempt to avoid this the tube was placed in the suprahepatic and retro-omental spaces. Even omentectomy was performed for this reason. Stainless steel perforated buttons were tried at the

peritoneal end of the tube, but this also failed. This writer engaged in some experimental work utilizing an isolated loop of ileum which was transplanted into the abdominal wall and opened into the peritoneal cavity, therefore preventing the tube from becoming occluded. This method was not used clinically. But the peritoneal end was not always the cause of failure; the tube also slipped out of the dura or became obstructed at the ventricular site. Harsch, in 1953, described a shunt in females by utilizing one of the Fallopian tubes to accept the polyethylene catheter, therefore draining the CSF through the fimbriated end into the peritoneal cavity.

5. It was thought that the bone marrow could be utilized for CSF absorption and for this purpose a hollow stainless steel screw was placed in the vertebral body.

6. Pleural Cavity: Ransohoff, in 1953, described the ventriculopleural shunt. With this method the absorption was frequently inadequate and exudates developed. This procedure is still resorted to in recurrent subdural effusions occurring in children.

Experiments on animals, to utilize the thoracic duct within the chest for canulation, were carried out by Matson. Some personal experiments were carried out using the thoracic duct in the neck, but it proved technically too difficult.

7. Ureteral Shunts: In 1925, Heile anastomosed the kidney pelvis to the subarachnoid space. Matson, in 1949, used a polyethylene tube into the ureter and removed the kidney. Torkildsen described a modification of this procedure by producing a muscular tube from a flap of the bladder wall to receive the tube without sacrificing the kidney. The disadvantages here are easily seen:
    a. Loss of the kidney
    b. Loss of CSF and, with it, electrolytes
    c. The danger of retrograde infections

8. Shunts into the vascular system: In order to overcome the pressure differences between the two systems and to prevent backflow of blood, valves were developed. The two types of valves most commonly used are the Heyer and the Holter valve. The former is a slit-and-core valve and is located at the end of the tube. The Holter valve is a ball valve and can be used as a pump from outside. This valve is located over the mastoid subcutaneously and is connected to the ventricular and the jugular catheters. In both instances, communication is established between the lateral ventricle and the right atrium of the heart. These shunts have proved most satisfactory, but they too are not without failures.

In closing, I want to point out two factors which all these shunts have in common. They all depend on tubes and the function of technical arrangements. Therefore, even some of the best and most suitable procedures are doomed

to fail. The other factor to be considered is the growth of the child which, in some cases, will lead to nonfunctioning by withdrawal of the tube either from the ventricle or from the different organs utilized. The most desirable means to treat hydrocephalus would be the pharmacologic control of inhibition of CSF production. There is one point in favor of the treatment of hydrocephalus; that is, a certain percentage of cases of congenital hydrocephalus arrest themselves spontaneously after a period of time. It then becomes only a temporary measure to help these children survive that period without further brain damage. The spontaneous arrest of hydrocephalus is probably responsible for many or all of the various surprising and astonishing results reported.

* * * * * *

Radioisotopes in Tropical Medicine (Continued)

WHO Chronicle, Vol. 17, No. 3, March 1963.

Some Entomologic Problems of Tropical Medicine

The aims of medical entomology include the identification of the arthropod vectors transmitting disease agents, the study of the role of the vector and its natural history in transmission, and the development of methods for vector control or elimination (12). Without a sound knowledge of the ecology of the vector, any attempt at control may fail: ecologic factors are always complex, especially when there is an alternative vertebrate reservoir for the infective agent. It is desirable to attack the vector at the most vulnerable point of its life cycle, using the simplest and most economic methods; this calls for an intimate acquaintance with its life history, population statistics, feeding and mating habits, and patterns of dispersal or hibernation. In this connection, radioisotopes have been usefully applied to the study of flies, ticks, and mosquitoes (13). An attack based on a sound appreciation of vector bionomics may involve making a planned change in the habitat of the vector or may enlist the aid of its natural enemies.

Even the effective use of insecticides largely depends on ecologic studies, since these compounds must be used carefully if maximum success is to be obtained with minimal risks to man and domestic animals. The use of residual insecticides proved very successful at first, but brought in its wake hazards to health and some unjustified relaxation of sanitary standards. As in the case of antibiotics in clinical medicine, the result has been a feverish search for better and more powerful weapons, yet it might be wiser to elucidate—with the aid of isotopes—the fundamental action of insecticides as they impinge on insect biochemistry. The control or complete elimination of diseases transmitted by insects is perhaps within reach. It might be possible—

---

12. Bruce-Chwatt, L. J. (1962) In: Radioisotopes in tropical medicine, p. 211.
13. Jenkins, D. W. (1962) In: Radioisotopes in tropical medicine, p. 235.

with the aid of radioisotopes—to induce insects to eliminate themselves, so greatly may their survival and reproduction be modified by irradiation. Insects compete with man, often with outstanding success because of the complex adaptations of their physiology. The mechanism of these adaptations can now, however, be studied with isotopic methods to find suitable points for attack. Radioisotopes have solved some problems of research and control that had proved obdurate to conventional technics. Not only can much be learned about insect movement and mortality through the simple tagging of individual insects, but irradiation—secured by isotopes or other means—can produce sterile and other mutants that may have value in insect control. Isotopes can also be employed to study the site and mode of action of residual insecticides and the best ways of spreading these compounds from the air.

Over 40 different isotopes have been used in such studies. Some are reasonably safe to handle; others demand special care. Those most often used for ecologic investigations are the beta-emitters ^{32}P, ^{35}S, and ^{89}Sr. Factors to be considered in choosing an isotope for a particular study are its half-life, effective incorporation in the insect, low toxicity, ease of handling and detection, and cost. Although the beta-emitters are best for simple use, the range of detection of beta radiation is short, and gamma-emitters are required for detection at any distance. It is possible to render insects radioactive for behavior studies—without harming them—by adding isotopes to their food, water, or nutritive media, by attaching tracers externally, or by injecting them, or by exposing the insects to radioactive gases. In the field, the radioactive insects can then be detected by means of portable Geiger counters or autoradiographic exposures on photographic plates or strips of X-ray film. Thus, the dispersal and longevity of Anopheles gambiae mosquitoes in East Africa have studied (14) by introducing the beta-emitters ^{32}P or ^{35}S into larval breeding pans and making autoradiographic checks on recaptured adult specimens. By using different isotopes at different times the date of recapture can be checked against the date of release. Such work has shown, for instance, that mosquito movement is not random but follows the distribution of human settlements, and it has helped to elucidate the problem of preference when a mosquito feeds on more than one type of vertebrate host.

Insect Control

One method of controlling insects by self-destruction is through the release of sterile gamma-irradiated males to compete with and dominate the fertile male population. This method is particularly successful when the females mate only infrequently. In this way, screw-worm disease of cattle was entirely eliminated from Curacao; and the weekly dissemination of 50 million irradiated male flies from aircraft over a 2-year period had the same result in Florida and other southeastern parts of the United States by 1959—an achievement that is a landmark in entomologic history. A similar principle

14. Gillies, M. T. (1962) In: Radioisotopes in tropical medicine, p. 267.

may be applied to both male and female mosquitoes. The easiest method is to subject them to external beta or gamma sources of radiation, but the incorporation of isotopes may also be employed. Radiation may certainly be used for killing, as distinct from controlling, insects; but they are about 100 times as resistant as most vertebrates, and the most useful results are obtained by employing relatively small doses to disturb their metabolism and reproduction and to cause sterilization or the development of distorted, short-lived or lethal mutants. (It must be borne in mind that not all mutations will necessarily be unfavorable; longevity may be increased.)

The release on a large scale of insects whose genetic characteristics have been modified by irradiation offers much scope for biologic control. This is exerted through the production of dominant or recessive lethals of either sex, of sterile hybrids, or of strains with very one-sided sex-ratios; and through the selection of strains with physiologic and behavioral characteristics unsuited to the requirements of dispersal and resistance. The importance in this connection of the new science of mosquito genetics is obvious. Thus, isotopic tagging has shown that short-winged varieties of Aedes communis do not bite human beings and could perhaps be used to drive out populations of the longer-winged variety that transmit malaria.

Biologic control may also be effected through the use of infective agents or predators. The former include various rickettsiae, bacteria, protozoa, and fungi, all of which have been subjected to isotope labeling to study their effects on disease transmission. A harmless virus normally commensal with a vector may be made noxious to it by previous culture or suspension in a medium such as ^{14}C-labeled alanine. The tedious process of assessing the efficiency and relative importance of the natural predators of vectors has been simplified by the use of isotopes, for the ingestion of a radioactively labeled insect leaves a radioactive tag in its predator. Mosquitoes are readily labeled with ^{32}P and measurements of radioactivity made on mosquito predators, such as mantids, beetles, spiders, and frogs allow for a quantitative assessment that is useful in choosing the most efficient predator for biologic control.

Finally, the success of any biologic or other form of control of vectors can be assessed properly only if accurate methods of calculating insect populations in the area under study are available. A relatively easy method is by releasing isotope-labeled insects in known quantity and noting the proportion of marked to unmarked specimens in recaptured samples. This method is also applicable to the determination of longevity and mortality rates, both natural and following the application of insecticides or other control technics.

(To be continued)

About 15% of the world's inhabitants live in countries where the infant mortality rate is between 16 and 30 per 1000 live births, and about 7% in countries where it is about 40. The rest—nearly 80% of the world's population—live in countries where the infant mortality rate varies between 60 and at least 150 and where 50% of all deaths occur in children under the age of 5 years. —WHO Chronicle, May 1963.

SUBMARINE MEDICINE SECTION

Submarine Medicine Program

Introduction by Rear Admiral A. S. Chrisman MC USN, Deputy Surgeon General, and Senior Submarine Medical Officer of the U. S. Navy.

Military medicine is conventional medicine plus a great deal more. In addition to treating the ill and injured, military medicine concerns itself with the following missions:

(a) selection of physically fit and psychologically adaptable personnel
(b) prevention of illness and injuries
(c) training of personnel in all phases of the medical aspects of the particular field of military medicine in which engaged
(d) conducting research in all special fields in which the Medical Department requires a singularly definitive brand of expertness

The Navy is responsible for maintaining the freedom of the seas, which today means on, beneath, and above them, and which will mean ever deeper beneath and higher above them in the future. Thus, submarine medicine is constantly becoming more important to the seapower of the United States which is a continuing and necessary force, insuring the peace and security of the free world.

The underwater operations of the Navy are rendered specialized medical support by the submarine medical officers, a special designation established during World War II. These physicians are trained in all phases of underwater operations and those who serve with atomic submarines are also given specialized training in radiation biology. These areas lie beyond the scope of medical school or clinical training programs and, therefore, require special courses.

Thus, through its various possibilities, submarine medicine does not restrict its trainees' future development. Rather, it provides additional training not otherwise available which permits them to better perform their military duties and enhance their future professional capabilities.

Allan S. Chrisman

ALLAN S. CHRISMAN
Rear Admiral, MC, USN
Submarine Medical Officer

Admiral Chrisman invites all medical officers to read the following feature article explaining the Submarine Medicine Program. —Editor

SUBMARINE MEDICINE PROGRAM

By CDR John H. Schulte, MC, USN, Director, Submarine Medicine Division, BuMed, and LTJG Frank N. Henson, MSC, USN, Head, Submarine Medicine Operations Branch, BuMed

Submarine medicine is the military medical specialty which supports all underwater operations in the Navy. This includes providing medical services to the crews of both conventional and nuclear submarines, and the medical care of deep sea divers and underwater swimmers. In general terms, the practice of submarine medicine can be considered a combination of general practice and of occupational medicine.

All of the underwater services in the Navy are volunteer organizations. Submarine medicine, therefore, provides a unique opportunity to work with a highly motivated and specially trained group of volunteers. Medical officers feel that their professional careers have been enhanced, and their personal lives greatly enriched, through their experiences and associations in the submarine service.

Although the submarine medicine organization is a small one, the program is experiencing a rapid growth at this time. There are presently 81 billets for submarine medical officers; within the next 2 years approximately 120 medical officers will be required in the program. Since the organization is relatively small, it is possible in most instances to give consideration to the desires and capabilities of each individual in making duty assignments.

The Navy's highest priority program is the Fleet Ballistic Missile, or POLARIS, program. POLARIS submarines are equipped to fire the fleet ballistic missile while submerged. Submarines are normally assigned the names of fishes, but in the case of the POLARIS there has been a departure from this tradition; these submarines are named for famous Americans. The following POLARIS submarines are now in commission: USS GEORGE WASHINGTON, PATRICK HENRY, THEODORE ROOSEVELT, ROBERT E. LEE, ABRAHAM LINCOLN, ETHAN ALLEN, SAM HOUSTON, THOMAS A. EDISON, JOHN MARSHALL, THOMAS JEFFERSON and LAFAYETTE. Each of these submarines has two complete crews known as "Blue" and "Gold." One crew remains ashore while the other is on patrol with the submarine. Due to the mission of these submarines and the nature of the patrols, a medical officer is assigned to each crew. Since the POLARIS submarine program creates the greatest demand for medical officers, every submarine medical officer can anticipate spending some time as a member of a POLARIS submarine crew. At present these submarines are being built at the rate of one per month.

The Naval Reactors program provides a unique opportunity to receive special training. Each new nuclear submarine brings with it special medical problems. A medical officer is assigned to the precommissioning crew of each nuclear submarine for a period of about 12 months. In order to support this program, between 15 and 20 medical officers are selected for this program each year. In addition to the regular course of instruction in Submarine Medicine, these medical officers receive 12 weeks of special instruction at an Atomic Energy Commission (AEC) Reactor Site. Upon completion of this course of instruction, they are assigned to the crews of nuclear submarines under construction. Nuclear submarines are being built at Portsmouth, New Hampshire, New London, Connecticut, Camden, New Jersey, Newport News, Virginia, Pascagoula, Mississippi, and Mare Island (Vallejo), California.

A certain number of medical officers can anticipate serving from 12 to 18 months as Squadron Medical Officers. In this capacity the medical officer has over-all responsibility for the medical care of approximately 2000 officers and men. The Squadron includes a submarine tender, containing a wide variety of industrial repair facilities, and a 35-bed hospital. The Squadron also includes a diving ship. The medical officer is responsible for medical supervision of the divers. Submarine Squadrons are located at New London, Connecticut; Norfolk, Virginia; Charleston, So. Carolina; Key West, Florida; San Diego, California; and Pearl Harbor, Hawaii.

Service in submarine medicine also offers a unique opportunity for those interested in research and teaching assignments.

The U. S. Naval Medical Research Laboratory, Submarine Base, New London, Connecticut, is the home of Submarine Medicine. Research in all phases of submarine medicine is carried on at this Laboratory. Of greatest importance are the research programs in respiratory physiology and in assessment of personnel for submarine duty. Medical officers assigned to the Laboratory also have additional duty at the Submarine Escape Training Tank.

The foremost center for training in deep sea diving and for research in underwater physiology is located in Washington, D.C. Two activities: The Naval School, Deep Sea Divers, and the Naval Experimental Diving Unit, occupy a single building at the Naval Weapons Plant. Medical officers assigned to these activities work together in teaching the medical aspects of diving and in conducting research in underwater physiology.

Another unique opportunity in submarine medicine is duty on the staff of the Naval School, Underwater Swimmers, Key West, Florida. This school is the "Scuba College" of the Navy. Here the medical officer participates in the training program, and also provides medical care for the staff, students, and their dependents. Submarine medical officers also serve with Underwater Demolition Teams. This duty is similar to that at the Underwater Swimmers School. At present, teams are located on each coast.

The training course in submarine medicine is conducted in two sections. The first section convenes annually at the Naval School, Deep Sea Divers, Washington, D.C., on the third Monday in August. The second section convenes at the U.S. Naval Submarine School, New London, Conn., on the first Monday in October each year. Each section receives an identical course of instruction, but in a different order.

The first section receives Underwater Physiology (diving training), Basic Submarine Medicine, Basic Submarine Training, Radiobiology, and (if desired and selected) Reactor Site Training. The second section receives Basic Submarine Medicine, Basic Submarine Training, Radiobiology, Underwater Physiology and their Reactor Site Training. The sections are combined for the courses at New London which include Basic Submarine Medicine, Basic Submarine Training and Radiobiology.

Following is a list of the subjects covered in each training program:

(1) UNDERWATER PHYSIOLOGY

A. Lectures

Orientation
Diving Equipment
Diving Methods
Diving Practices

C. Practical

1. Air Dives

Open Tank
River Dives (30 ft.)

A. continued:
- Diving Physical Examination
- Submarine Rescue Chamber
- Industrial Medicine
- Guest Lectures
- Respiratory Physiology Under Pressure
- Mixed Gas Diving
- Decompression Tables
- Clinical Conferences
- Diving Research Reports
- Diving Accidents

B. Laboratory
- 165 ft. Recompression Chamber
- 300 ft. Recompression Chamber
- 38,000 ft. Altitude Chamber
- Simulated Therapy
- Respiratory Laboratory
- Mixed Gas Scuba

C. continued:
- River Dives (90 ft.)
- Pressure Tank (100 ft.)
- Pressure Tank (300 ft.)
- Surface Decompression
- Lightweight Diving Gear
- Submarine Rescue Chamber
- Underwater Cutting and Burning
- Surface Demolition
- Salvage Job

2. Helium Dives
- Pressure Tank (60 ft.)
- Pressure Tank (385 ft.)
- River Dives (100 ft.)

3. Scuba Dives
- Pool
- Open Water Swim

(2) BASIC SUBMARINE MEDICINE

- Submarine Medical Department Administration
- Visual Acuity and Color Perception
- Audiology and Audiometry
- Dentistry
- Psychiatry - Psychology
- Respiratory Physiology
- Environmental Physiology
- Toxicology and Atmosphere Control
- Human Factors Engineering
- Sanitation
- Personnel Assessment
- Submarine Physical Examinations
- Submarine Escape and Treatment of Casualties
- ABC Warfare Defense
- Orientation Tours (Submarine Rescue Vessel, Electric Boat Div. of Gen.Dynamics Corp., and U.S. Naval Underwater Sound Lab.)

(3) BASIC SUBMARINE TRAINING

- Executive (Admin. Shiphandling, Diving, Surfacing)
- Engineering
- Electrical
- Weapons
- Operations
- Tactical

(4) RADIOBIOLOGY

- Review of Mathematics
- Nuclear Physics
- Radiochemistry
- Radiobiology
- Radiation Health Practices

(5) REACTOR SITE TRAINING

- Chemistry and Radiological Controls
- Nuclear Power Plant Orientation
- Radiological Controls
- Engineering Laboratory Technic
- Power Plant Systems for Medical Officers

Graduates of the training course are eligible to wear the Submarine Medicine insignia after they have been designated as "Qualified Submarine Medical Officers." To achieve qualification, they must practice this specialty for one year, prepare an acceptable thesis, and pass a comprehensive examination.

Graduates of the training course applying for postgraduate or residency training in internal or occupational medicine, public health, radiology, radiobiology and research are credited with this training as part of their requirement for certification. Advanced courses in submarine medicine are available at the University of Pennsylvania and the University of Buffalo. Clinical medical specialty training in all fields is available to submarine medical officers on an equal basis with other medical officers. In many instances their submarine duty enhances their possibility of selection for specialty training.

Medical officers assigned to duty on board a submarine or attached to a submarine Squadron are entitled to receive submarine pay, in addition to all other compensation. The amount of submarine pay received varies with rank and time in service. The details of this are given in the following table:

Rank	Cumulative Years of Service			
	Over 4	Over 6	Over 8	Over 10
LT	$165	$180	$185	$190
LCDR	185	185	195	210

Therefore, a submarine medical officer in the grade of Lieutenant with dependents, and with more than 4 years' service for pay purposes, receives a monthly income of $830.48. Medical officers attached to the Submarine Escape Training Tanks, the Naval School, Deep Sea Divers, and the Experimental Diving Unit, receive extra compensation at the rate of $100 per month. Such an officer, with dependents and more than 4 years' service for pay purposes, receives a monthly income of $775.48.

A certain amount of extra compensation accrues to each officer during the training period. While attending the courses in underwater physiology, the medical officer will be entitled to receive extra compensation in the amount of $110 per month. Since this instruction is received under temporary duty orders, the medical officer is also entitled to receive a per diem allowance. This usually amounts to about $250 for the 8-week period.

The only obligated service requirement for attending this course is an agreement to serve in the submarine medicine program for two years following completion of training. This obligation runs concurrently with any other obligation that you may have.

Several training billets in Submarine medicine remain unfilled for the classes convening in August and October of this year. Medical officers desiring to serve in this expanding and challenging field of medicine that embraces all underwater operations of the Navy are encouraged to submit a request for this training similar to that below:

SAMPLE REQUEST:

From: _____
To: Chief, Bureau of Medicine and Surgery, Navy Department
Washington 25, D. C.

Subj: Course of instruction in submarine medicine; request for

1. It is requested that I be considered for a course of instruction in submarine medicine convening in (August or October) (the month you desire to attend) 1963.

2. If approved for this course of instruction, I agree to serve in the submarine medicine program for 2 years beyond the completion of the course. It is my understanding that I will not incur any additional obligated service for this training.

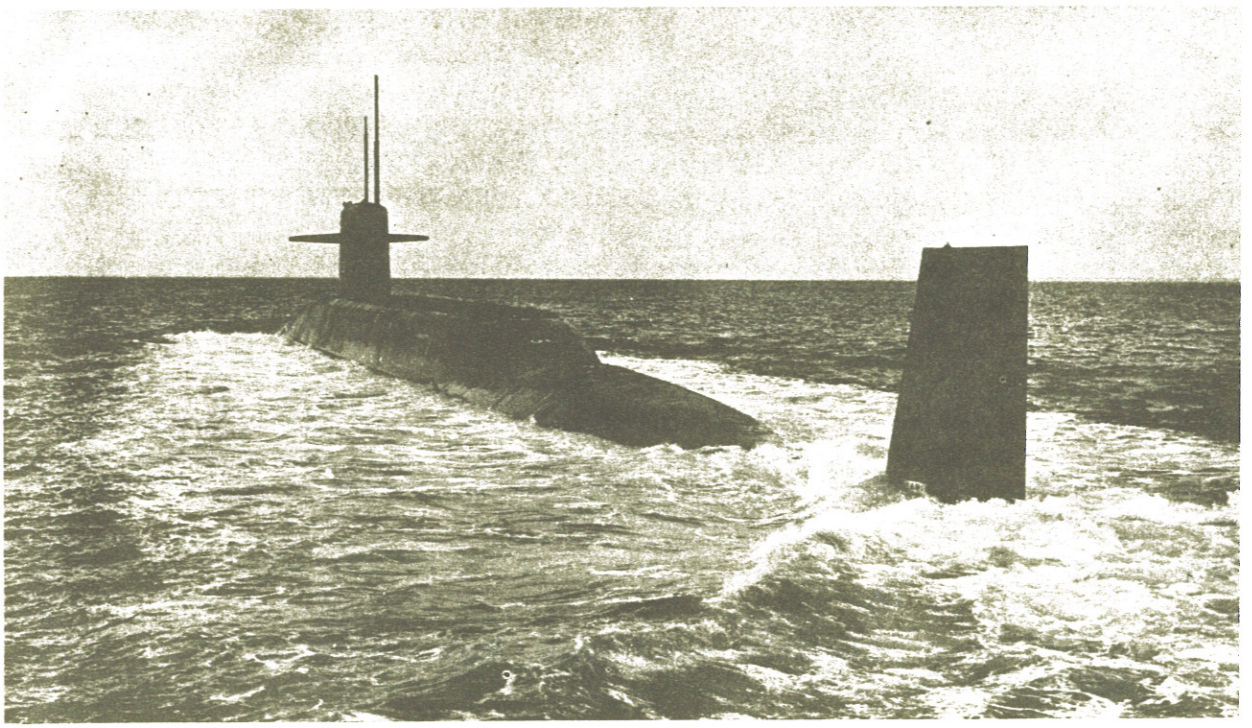
3. It is further requested that I be considered for Reactor Site Training.

(Signature)

Note: (1) Medical officers on active duty should forward this request via their Commanding Officer.
(2) For those not desiring reactor training omit the third paragraph.

Medical Officers desiring further information concerning the unique opportunities in Submarine Medicine may address inquiries to the Director, Submarine Division, Bureau of Medicine and Surgery (Code 75), Navy Department, Washington 25, D. C.

NOTE: We welcome the introduction to the Submarine Medicine Program by Admiral Chrisman who is the Senior Submarine Medical Officer of the United States Navy. The Admiral attended the Submarine School in 1931 and has continued his participation and keen interest in all activities of Submarine Medicine throughout his naval career.
—Editor



Lafayette, the newest and largest POLARIS submarine, successfully completed her first sea trials on February 25. The 7,000-ton ship is the first of a class of thirty-one nuclear submarines. BuShips Journal, May 1963

MISCELLANY

IMPORTANT NOTICE
on
Shortage of Medical Officers for Early FY 1964

In July 1963, the Navy will be short approximately 240 medical officers on active duty. A Special Selective Service Call has been placed for physicians to fill that deficit. However, it is not expected that any significant number of those physicians supplied by Selective Service will be available before 1 August 1963. Many will not report for active duty until later dates.

The shortage of medical officers will affect the entire Navy. Certain operational units and stations with a single medical officer billet will not be able to tolerate a hiatus and will have to be served by TAD officers from other areas. Naval hospitals, station hospitals, and dispensaries may be called upon to furnish officers for TAD and thus will have to operate on a reduced staffing ratio during the period of the hiatus.

In view of the above, it is recommended that Commanding Officers of all shore activities be prepared to furnish TAD medical officers for other assignments when requested. The shortage of medical officers will be largely in the field of General Practice. It is suggested that Commanding Officers review their work loads with a view toward curtailing elective work where possible, and that annual leave for staff medical officers during the summer months be carefully planned.

District Medical Officers are urged to confer with their respective Commandants with a view toward publicizing this shortage of medical officers to all activities within their Districts.

With the cooperation of all concerned, we will be able to accomplish our assigned Medical Department mission without undue inconvenience to anyone.—Professional Division, BuMed

* * * * * *

Notice Concerning the Publication - Control of Communicable Diseases in Man (NAVMED P-5038)

In consideration of the cost involved, and since the Bureau of Medicine and Surgery has no control over the issuance of this publication, the Bureau is requesting the Forms and Publications Supply Office (FPSO), Byron, Ga., to issue stock until exhausted, then withdraw as a Cognizant "I" item. After the supply is depleted FPSO will inform customers that this publication can be procured from American Public Health Association, 1790 Broadway, New York 19, New York. —Administration Division, BuMed

* * * * * *

Advance Information on 1964 NSHA Class

Attention of all Medical Service Corps officers is invited to BUMED INSTRUCTION 1520.12B concerning recent changes in the Medical Service Corps Training Program. A significant change requires ALL MSC officers desiring to be considered for assignment to the NSHA class convening in August 1964 to submit individual requests to reach BuMed prior to 1 January 1964. —MSC Division, BuMed

* * * * * *

PHYSICAL STANDARDS

Physical Standards. From time to time Reports of Medical Examination (SFs88) and Consultation Sheets (SFs 513) are received in BuMed in which the examiner makes reference to obsolete physical standards (i.e. AR 40-115 and AR 40-503). The current physical standards for enlistment or reenlistment in the U. S. Navy or Reserve components thereof are set forth in Chapter 2 of Army Regulations 40-501. The physical standards set forth in AR 40-115 and AR 40-503 have been canceled and superseded. Appropriate action should be taken at command levels to remove these publications from circulation.

Availability of Chapter 2 AR 40-501. Distribution of Chapter 2, Army Regulations 40-501 and changes thereto was made under cover of the following directives:

BUMED NOTICE 6110 of 1 March 1961 - (original distribution)
BUMED NOTICE 6110 of 6 November 1961 - (changes)
BUMED NOTICE 6110 of 9 May 1962 - (changes)
BUMED NOTICE 6110 of 10 January 1963 - (changes)

Additional copies of the foregoing directives may be obtained from BuMed (Code 4522).

Physical Profile Serial System. Frequent reference is still being made to the Physical Profile Serial System in regard to the physical fitness of Navy personnel. Physical profiling of Navy personnel is not required except for initial profiling which is accomplished at Armed Forces Examining Stations (AFES). Physical profiling at the AFES is accomplished for Army statistical purposes and no further use is made of the assigned physical profile serial by the Navy Medical Department. The physical profiling of Marine Corps enlisted personnel is still required in accordance with Marine Corps directives. The physical profiling of Marine Corps enlisted personnel is accomplished solely for the purpose of personnel assignment and distribution. The physical profile serial of Marine Corps personnel should not be used for medical purposes, i.e., separation criteria, medical surveys, etc. Attention is invited to BuMed Notice 6110 of 4 June 1962 and MANMED Advance Change 13-6 of 11 April 1963.

Applicable Physical Standards. The following chart, which was previously published in the MEDICAL NEWS LETTER, Vol. 41; No. 1, of 4 January 1963, is again published to aid in clarifying the use of physical standards in regard to the examination of applicants for entry into the various categories of the naval service.

Program	Reference
Appointment to commissioned grade in USN, USMC or Reserve components thereof	MANMED, Chapter 15
Enrollment in officer candidate training (all programs) leading to appointment to commissioned grade in USN, USMC or Reserve components thereof	MANMED, Chapter 15
Enlistment or reenlistment in USN or Reserve components thereof	Army Regulations 40-501 Chapter 2
Enlistment or reenlistment in USMC (Chargeable)* or Reserve components thereof	Army Regulations 40-501 Chapter 2
Enlistment or reenlistment in USMC (non-chargeable)	MANMED, Chapter 15
Appointment or enlistment of female personnel in USN, USMC or Reserve components thereof	MANMED, Chapter 15

*Men, 17 years of age or older who have not previously served in any of the Armed Forces or who have served for a period less than 6 months since 16 September 1940.

* * * * * *

The Secretary of the Navy Congratulates the Nurse Corps *

Please convey my warmest greetings and congratulations to the wonderful ladies of the U. S. Navy Nurse Corps. On this grand occasion we celebrate the fifty-five year history of their service to the Navy afloat and ashore. Through great devotion and quiet dedication they have continuously given our Navy a Nurse Corps absolutely second to none. May I wish each and every Navy Nurse a very, very Happy Birthday.

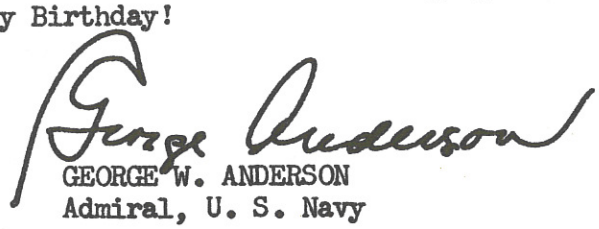
Sincerely,

/s/ FRED KORTH
Secretary of the Navy

***Addressed to BuMed**

CHIEF OF NAVAL OPERATIONS

I should like to compliment the Navy nurses, upon the occasion of the 55th anniversary of your Corps, on completing another year of outstanding service to the Navy and Marine Corps and to your country. Many of you have put in long hours "above and beyond the call of duty" and have brought to your work a kindness and sincere concern which have supplemented your medical knowledge and training in bringing many grateful patients back to health. May the coming year bring you equal satisfaction as you continue this essential and challenging work. Well Done and a Happy Birthday!



GEORGE W. ANDERSON
Admiral, U. S. Navy

Navy Nurse Corps Celebrates 55th Anniversary

To many military personnel observing Navy nurses on duty in naval hospitals and other treatment facilities at home and overseas, May 13, 1963 was another ordinary day. However, these persons did witness the skill and zealousness of the nurses in giving devoted nursing care to thousands of hospitalized Navy and Marine Corps personnel, their wives and children, and in many instances, the counterparts of these individuals of the Army and Air Force. On that date, medications were continued as usual, and complex therapeutic measures were administered quietly and efficiently. Navy nurses assisted in crises involving birth, accident, surgery, and death. They carried on with their teaching program for patients, Hospital Corpsmen, and Hospital Corpswaves while voicing cheerful and reassuring words to those stricken with illness or distress.

Yes, this was merely another ordinary day—a normal expectancy of high nursing standards, so to speak—or so it seemed to these numerous observers. However, unvoiced as it was, our nurses sensed a great personal pride in that particular date, for it marked another milestone for their corps—the fifty-fifth anniversary of the establishment of the Navy Nurse Corps. Thus, it appears appropriate to publish the following message which was received by all Navy nurses on the occasion of that important anniversary. —Editor

DEPARTMENT OF THE NAVY
BUREAU OF MEDICINE AND SURGERY
WASHINGTON 25, D. C.

GREETINGS TO NURSE CORPS OFFICERS

As the historical date of the Fifty-fifth Anniversary of the establishment of the Navy Nurse Corps approaches, I am pleased and happy to extend my greetings and heartiest congratulations to each of you.

The occasion of this anniversary affords all of us an opportunity to reflect proudly on the achievements of nurses serving faithfully through the years and to view, as well, the professional progress of our Corps. Each decade in the past fifty-five years of the Corps' existence presents vivid illustrations of the devotion to duty, personal sacrifices and professional superiority of our members. We have an illustrious heritage, and one of which we may be justifiably proud.

On this anniversary, I am sincerely grateful for your individual contributions, your loyal support and your concern with the improvement of nursing. As Navy Nurse Corps officers, you are recognized for your proficiency in your profession and your marked ability in leadership. All of these have been instrumental in maintaining high standards of nursing service which is in keeping with the traditions of the Navy and will contribute, I feel certain, to the success and future progress of our Corps.

My warmest personal regards and sincere best wishes for a very HAPPY ANNIVERSARY.

Ruth A Erickson

RUTH A. ERICKSON
Captain, NC, USN
Director, Navy Nurse Corps

FROM THE NOTE BOOK

Postgraduate Short Courses for Medical Corps, Nurse Corps, and Medical Service Corps Officers Sponsored by Department of the Army during FY 1964

The following postgraduate professional short courses will be conducted by the Army Medical Service during Fiscal Year 1964. Eligible Medical Corps and Nurse Corps officers, are those who meet the criteria, prescribed by BUMED INSTRUCTION 1520.8 and BUMED INSTRUCTION 1520.14, respectively. Eligible Medical Service Corps officers are those who are currently assigned to billets with a direct relationship to the courses listed and should apply in accordance with BUMED INSTRUCTION 1520.12B:

COURSE	INSTALLATION	DATE
Fundamentals of Medical Support in Modern Warfare	Medical Field Service School, Brooke Army Medical Center	9-20 Sep 1963 All Corps
	Walter Reed Army Institute of Research	30 Mar-10 Apr 1964 All Corps
Ophthalmic Pathology	Armed Forces Institute of Pathology	16-20 Sep 1963 MC
Sixteenth Annual Symposium on Pulmonary Diseases	Fitzsimons General Hospital	23-27 Sep 1963 MC
Medical Management of Mass Casualties	Walter Reed Army Institute of Research	24-26 Sep 1963 All Corps
	Medical Field Service School, Brooke Army Medical Center	2-6 Dec 1963 All Corps
Orthopaedic Pathology	Armed Forces Institute of Pathology	30 Sep-8 Nov 1963 MC
12th Annual Armed Forces Obstetrics - Gynecology Seminar and The 2nd Annual Meeting of the Armed Forces Chapter of the American College of Obstetricians and Gynecologists	Letterman General Hospital Presidio of San Francisco, California	7-10 Oct 1963 MC
The Pathology of Radiation Injury	Armed Forces Institute of Pathology	7-11 Oct 1963 MC

In view of the anticipated shortage of travel funds for Fiscal Year 1964, only a limited number of officers can be authorized to attend these courses on travel and per diem orders chargeable against Bureau of Medicine and Surgery funds. Eligible and interested officers who cannot be provided with travel orders to attend at Navy expense may be issued Authorization Orders by their Commanding Officers following confirmation by this Bureau that space is available in each case. Requests should be forwarded in accordance with instructions listed in paragraph 1, as appropriate, at least 8 weeks prior to commencement of the requested courses. —Training Branch, Professional Division, BuMed.

NOTE: Later courses will be published in subsequent issues of the Medical News Letter.

* * * * * *

Space and Astronautics Orientation Course

This course has been established to give senior officers of the Navy a better understanding of this new technology, its application to naval warfare, and its important role in national defense. The course is in consonance with the Navy's global mission and emphasizes the significant impact of astronautics on sea-power. It is primarily designed for those senior officers who have not had the opportunity to gain knowledge of astronautics and our current Space programs. A highlight of the course is a visit to the space vehicle launch and control facilities at Point Arguello Naval Missile Facility and at Vandenberg A F Base.

Location:	U. S. Naval Missile Center, Point Mugu, Calif.
Duration of Course:	Four days (Tuesday - Friday)
Convening Dates of Course:	9 July 1963 20 August 1963
	23 July 1963 27 August 1963
BUMED Quota:	ONE - each class
Deadline Date to Apply:	Six (6) weeks in advance of convening date
Eligibility:	Rank of Commander and above. TOP SECRET Security Clearance required

Due to the expected shortage of travel funds for Fiscal Year 1964, only a few officers can be approved for attendance at the courses on travel and per diem orders from the Bureau of Medicine and Surgery. Officers who are eligible and interested and who cannot be issued travel orders for attendance at Navy expense may be issued Authorization Orders by their Commanding Officers after this Bureau has confirmed that space is available in each case. Requests should be forwarded in accordance with BUMED INSTRUCTION 1520. 8 and comply with the deadline dates as indicated above. All requests must indicate that a Security Clearance of TOP SECRET has been granted to the officer requesting attendance, and if Bachelor Officers' Quarters are desired. —Training Branch, Professional Division, BuMed

* * * * * *

DENTAL SECTION

Evaluation of Dentures Processed by Different Techniques

F. A. Peyton, D. Sc., and D. H. Anthony, D. M. D., M. S., University of Michigan, School of Dentistry, Ann Arbor, Mich. J Pros Dent 13(2): 269-282, March-April 1963.

Studies of the accuracy of fit of dentures produced of various materials and by methods suitable for large scale production have resulted in separation into three well-defined groups. The most accurate dentures were invariably of the self-cured type. When stored in water for an extended period, they also changed relatively little, apparently as the result of fewer stresses formed during cooling in the molds. The heat-cured dentures did not fit quite as well, but were considered good. The changes during storage were minor and tended to improve rather than detract from the initial fit. The special injection group comprised of Jectron, Tilon, and Luxene, was similar in regard to fit and was slightly less accurate as a group.

The clinical importance of the relatively small discrepancies of fit found in all of the dentures that were studied has not been determined with any degree of certainity. It is thought that all that were described would be clinically acceptable. It is known that the retention of a denture is dependent upon the distance between the denture surface and the tissues, as well as upon the capillary forces and the area covered. The oral tissues have been shown to possess remarkable properties of adaptation, but this does not mean that they are normal and healthy under conditions which require changes of a millimeter or more.

The evaluation of denture processing methods did not yield as well-defined results as the accuracy studies, since more factors were involved. In general, it has been determined that the self-curing method offers the simplest method and involves the least amount of equipment. It is, therefore, more adaptable to varied conditions and may be employed where technicians do not have special training. There are relatively few opportunities for serious errors with this method other than packing the plastic into molds insufficiently hardened, using excessive molding forces, or delayed trial packing. The self-curing materials should find wide application for repairs and relining, since the application of heat causes warping of plastic dentures.

The heat-cured method is being employed satisfactorily in large laboratory installations at present. The total processing time is relatively long, but since the actual working time is the same as in other methods, it is nearly

as efficient for continuous production. The opportunities for error are similar to those listed for the self-cured method and there is an additional hazard in the control of the heat and time of the curing cycle. The special injection methods require more highly trained personnel, and the equipment is more complicated and expensive.

The contours of 4 heat-cured and 4 self-cured maxillary dentures, which had been stored in water for approximately 20 months, were measured and the discrepancies were compared with previous measurements obtained 24 hours after deflasking and after storage in water for 8 months. These data indicated that remarkably few changes of contour occurred in the dentures of either type of plastic. Each of the dentures was fractured along the midline before repair, and the average load required to fracture the heat and self-cured dentures at the time of fracture was found to be the same.

One pair of heat-cured dentures was repaired by a heat-curing method and the other pair by a self-curing method. A pair of self-cured dentures was repaired by the heat-curing method and the remaining pair by the self-curing method. The contours of each of the dentures were remeasured after the repairs and the data for the discrepancies were compared with the data obtained from the same dentures before the repairs. The heat-cured dentures exhibited considerable changes in contour after they had been repaired by the heat-curing method, but relatively few changes resulted from the self-curing repairs. The self-cured dentures exhibited practically no changes during repairs by either method.

* * * * * *

Contouring the Mechanical Matrix

Dr. Wilmer B. Eames, Northwestern University Dental School, 311 East Chicago Ave., Chicago 11, Illinois. Dental Progress 3(3): 176-179, April 1963.

In a study of the several types of matrix bands, Phillips and associates reported that the wedged and contoured matrix more nearly restored the original tooth contour than bands wedged but not contoured. The least accurate was the mechanical matrix that was not contoured and not wedged.

Black recommended use of a heavy steel matrix, which was tied to the tooth with ligatures, and a mechanical separator to provide proper contact. Markley advocated custom-made 0.0015-inch (0.0038-cm) ligated matrix material, the only material which can be burnished approximately to anatomic contour with an egg burnisher. Because of its thinness, the material must be reinforced with compound. Such reinforcement was suggested by Hollenback for a 0.002-inch (0.005-cm) matrix, so that an unyielding wall will support the thrusts of the amalgam condenser. Miller described the use of contouring pliers with a leaded concave surface on the lower beak, which permits shaping of the thin band of stainless steel without perforation.

Although these techniques have obvious advantages, the matrices shown to be least desirable remain popular because of their simple application. An

attempt has been made, therefore, to improve the contour of this matrix, so that anatomic tooth structure can be restored with reasonable accuracy.

Condensing a silver amalgam restoration without benefit of a tight wedge at the cervical portion of the matrix adds insult to an already traumatized area. Almost every dentist has seen the results of such unconcern for the supporting tissues of a restored tooth radiographically showing gross overhanging subgingival margins. Yet it is possible in a few seconds to place a wedge precisely, so that the matrix is held tightly against the neck of the tooth. Because minute subgingival discrepancies cannot be detected or easily dealt with, pre-formed wedges of balsa wood (Stimudents) are useful. These can be broken to suitable length for the individual cavity. Since the material assumes the shape of the interproximal space, it can be compressed extremely tightly, to hold the band securely against the tooth.

Whittled toothpicks also may be useful if care is taken not to distort the band by improper shaping. Markley recommended that the toothpick be custom cut with a scalpel blade to the shape of a sled runner, to facilitate placing the proper shaping to the embrasure.

If decay is so extensive that the preparation of the proximal surface of the cavity must be extended beyond a minimum conservative outline either bucally or lingually, the yielding matrix band should be reinforced with tracing stick compound. Routine reinforcement may not be necessary when wedging is adequate, because the band material of the mechanical matrix is stiffer than that of custom-made matrices. However, there can be no argument about the importance of reasonable rigidity of the wall of the matrix.

Conclusion

The few moments required for placement of properly contoured and wedged matrix bands are rewarding, and any technique for restoration with silver amalgam will be enhanced by attention to this neglected phase of operative dentistry.

* * * * * *

Personnel and Professional Notes

Inspector General, Dental, Plans to Publish Excerpts from Reports of Recent Surveys. The Inspector General, Dental, RAdm F. M. Kyes, plans to publish excerpts from reports of recent surveys which are considered to be of sufficient importance to warrant their dissemination to the field.

Although a numerical or adjective rating system is not employed to grade a particular activity's overall standing, paying particular attention to these excerpts would enable a facility to attain a "4.0" or an "Excellent" in such a system.

The following items represent some of the more common deficiencies in dental facilities throughout the Naval establishment:

Need to strengthen or "beef-up" the in-service training program as directed by BuMed Instruction 1510.5A. We find a strong

correlation between the ability of dental personnel to pass examinations for advancement and the quality of the in-service training provided to them. A senior dental officer cannot, in any fairness, expect his men to compete with better trained men just because he is "too busy" to give them what other officers furnish cheerfully and completely. Good training is leadership in action! How is your leadership?

Deviations from the Uniform Material Issue Priority System as promulgated by OpNav Instruction 4614. 1A. — The only way a priority system works is to have everyone adhere to it. If everyone steps up his priority to serve his own needs or to cover his shortcomings in planning, the whole system of priorities loses its value. You are the loser in the end!

Lecture by Panel on Anesthesiology. A panel discussion on Anesthesiology was presented to staff, resident and postgraduate dental officers, and civilian and military guests at the U. S. Naval Dental School, Bethesda, Maryland, on 26 April 1963.

LCdr Henry J. Sazima DC USN of the Oral Surgery Department of the Naval Dental School was the moderator for this panel. The panel consisted of Cdr Dermot A. Murray MC USN, Chief, Anesthesiology Service, U. S. Naval Hospital, NNMC, Bethesda, Md.; Dr. Edward J. Driscoll, Clinical Director, National Institute of Dental Research, National Institutes of Health, Bethesda, Md.; Dr. Morgan L. Allison, Professor and Chairman, Oral Surgery and Anesthesia, College of Dentistry, Ohio State University, Chief of Oral Surgery, University Hospital, Ohio State University, and Assistant Professor, Department of Physiology, College of Medicine, Ohio State University; and Dr. Frank J. Grabill, Consultant in Anesthesiology to the National Naval Medical Center and many other military installations throughout the greater Washington area.

Each panelist was given 8 to 10 minutes to cover specific subjects under the general heading of "Anesthesiology." Every panelist had also been furnished with questions which the students of the Naval Dental School had prepared. The questions covered a wide range of material including pre-operative evaluation, pre and post-operative management of the ambulatory patient requiring general anesthesia; newer drugs and techniques of ambulatory dental general anesthesia; problems and techniques of ambulatory dental general anesthesia; and monitoring the patient during general anesthesia.

LCdr Johnson to Appear at Meeting. LCdr Walter N. Johnson has been selected as an essayist for the First Mexican International Dental Seminar to be held at Rosarito Beach, Baja California, Mexico, 30 May through 2 June 1963. His presentation, entitled "Current Concepts of Periodontal Therapy," will be presented in four parts, two hours each day. LCdr Johnson is currently serving on board the USS SPERRY (AS-12).

Dental Officers Appear as Clinicians on Virginia State Dental Association Program. The following Naval Dental Officers presented table clinics at the 94th Annual Meeting of the Virginia State Dental Association, which convened on April 28, 29, 30 and May 1, 1963 at the Golden Triangle Hotel, Norfolk, Va.

U. S. Naval Hospital, Portsmouth, Va.
"Early Detection of Oral Malignancies by the Papanicolaou's Test"
LCdr C. S. Scruggs DC USN
LCdr W. R. Hiatt DC USN
"Pin Reinforced Amalgams"
Lt William F. Hohlt DC USN
U. S. Naval Dental Clinic, Norfolk, Va.
"Esthetic Considerations Pertaining to Partial Dentures"
Cdr A. D. Echols DC USN
"Remount Procedures on Full Denture Construction"
Lt Elmer R. Hudson DC USN
"Correction of Clefts and Aberration of Frena"
Capt Robert H. Loving DC USN
Lt Sam V. Holroyd DC USN
"Amalgam Restorations"
LCdr Harry C. Pebley DC USN
U. S. Naval Amphibious Base, Little Creek, Va.
"Heat Cured Resilient Splints"
Cdr R. W. Elliott DC USN

Casualty Treatment Training Course at Norfolk, Va. Eight dental officers, including 2 from the U. S. Air Force, and 2 civilian dentists from the American Dental Association have completed the Casualty Treatment Training Course at the U. S. Naval Dental Clinic, Norfolk 11, Virginia.

The course, under the supervision of Bureau of Medicine and Surgery, is one of the 4 conducted throughout the Navy to develop in Dental Officers such skills in emergency casualty treatment as to make full use of their professional knowledge, thus enabling them to amplify the medical effort in time of major emergency. This was the second course to be conducted here this year. The next class convenes on 22 July 1963. Similar courses also are held at Bethesda, Maryland; Great Lakes, Illinois, and San Diego, California.

The Casualty Treatment Training Course is under the direction of Captain J. L. Keener, Head of Oral Surgery. He is assisted by Lieutenant Commander H. C. Pebley. Rear Admiral E. G. F. Pollard is Commanding Officer of the U. S. Naval Dental Clinic.

* * * * * *

OCCUPATIONAL MEDICINE

Neurodermatoses in Industry

A Psychosomatic Approach

Sadie H. Zaidens, MD, Lenox Hill Hospital, New York, N. Y. Industr Med Surg 32(4): 127-130, April 1963.

Statistically, skin diseases comprise the largest single group of occupational disabilities. Chemicals, irritants, allergens, oils, germs, and trauma are responsible for most of these dermatoses. The dermatologist must be aware of the work of each patient, his associates at work, and the materials he handles there. For example, cooks, salad-makers, dishwashers, bartenders, and waitresses are constantly handling wet and irritating materials, such as citrus fruits, soap, detergents, and water, which cause maceration of the skin and promote fungus infection.

Usually, once the responsible element has been eliminated, the skin disease clears readily, with the aid of dermatologic treatment. However, a certain percentage of patients do not heal even when the specific irritant or allergen is eliminated. In many of these patients, the dermatoses persist indefinitely; in others, they recur without any apparent physical reason. The eruptions may remain localized; they may spread peripherally; they may appear in additional predisposed areas (constitutional diathesis); or they may erupt in the areas quite unrelated to the occupation, but associated with the patient's psychological problems.

Furthermore, there is a large number of the afflicted who have forms of neurodermatitis that were never precipitated by external causes. To an experienced dermopsychiatrist, these last cases are easily recognizable; it is a category that includes many neurodermatoses that occur in industry as well as outside of industry.

In a study of cooks, three significant observations were made: (1) the frequency and extent of severe neurodermatitis of the lower half of the body: legs, anus, and genitals, areas not related to the work; (2) the infrequent occurrence, by way of contrast, of dermatoses of the hands; (3) the high percentage of bachelorhood, and the extremely isolated lives that these men lead. It would seem that their work represents their only means of sustenance, not only physically but psychologically; they feed and provide for themselves in every way through their work, evidently not entrusting themselves to any

adult interpersonal relationship. Their skin disorders are thus more related to their intra- and interpersonal problems than to their work as such.

Many of these cooks were elderly Greek men who migrated to this country for economic reasons. They came here alone at an early adult age, moved into a cloistered Greek neighborhood and remained there throughout the years. Some were unable to bring their Greek women here and also were unable to assimilate and to marry women of other nationalities. With aging, their loneliness became more evident and their resiliency and compensations decreased, so that psychosomatic illnesses served as outlets for their psychological problems.

The Neurodermatitic Entities - Under the terms "neurodermatoses" or "neurodermatitides," the writer includes all those dermatoses in individuals who have a vulnerable inherited constitution, with a sensitive personality, a labile central nervous system, and a dermatologic diathesis to eczematization—the dermatoses being precipitated, aggravated, or perpetuated chiefly by emotional causes. Chemicals, oils, toxins, irritants, allergens, drugs, germs, or foci of infection can be ruled out or assigned a minor role in the genesis of these disorders. The neurodermatoses include generalized and localized types of neurodermatitis, nummular eczema, and in all probability, dyshidrosis. They also include recurrent pruritic and excoriated eruptions that vary in their appearance, at times presenting the clinical picture of psoriasis, seborrhea, or fungal diseases, but eventually evolving into typical cases of neurodermatitis.

The neurodermatoses may vary with regard to their stages, phases, locations, and extent of skin involvement; however, the fundamental lesions are typical vesico-papules, which coalesce into patches that become scaly, excoriated, at times fissured, and later lichenified. The variability depends upon the acuteness and the chronicity of the physical and emotional causes, and upon the anatomic location of the lesions.

Location of Lesions - In industry, one naturally expects to find most dermatoses on the hands, since they are used so much in work; yet, not all dermatoses of the hands are necessarily due to contact. Hands serve many functions other than work per se. Since they are used in attack and defense, for example, eruptions there are frequently the symbolic representations of repressed (unconscious) frustrations and anger. These may be expressed in the hostile phrases: "I could wring his neck," or "I would like to slap him down," etc.

Psychopathology - Patients with chronic extensive neurodermatoses are not usually encountered in industry. Very sick individuals avoid positions in which they would be exposed to embarrassment or questioning about their skin. Moreover, they have learned early in life to avoid stressful situations. As a matter of fact, extensive skin eruptions are an excellent unconscious device to evade close interpersonal contact, whether in work or in social or sexual situations. For example, Nancy turned down a good promotion as a private secretary because she was fearful that she could not fill the job, even though she had assumed it unofficially during vacation periods, had functioned well in it, and was familiar with all the work that the position entailed. Actually,

her greatest fear was caused by the fact that she would be working for the chief executive, from whom she anticipated criticism and control. That had been her problem with her mother, who was a hypercritical, maneuvering person; as a result of her early family experiences, she expected similar critical and controlling behavior from everyone, and particularly from authority figures.

The neurodermatoses encountered in industry are usually the more localized, the milder and the more chronic forms, with or without pruritus. Correspondingly, therefore, the personality disturbances found in relation to the localized entities are also of a more tempered quality.

Psychopathology of Neurodermatitis - If we understand the psychopathology of neurodermatitis, we can better understand and anticipate the psychopathology of the variants of the neurodermatosis, since the fundamental patterns are similar, both emotionally and dermatologically.

Psychiatric studies of patients with neurodermatitis have revealed that their personality problems are as characteristic as their skin manifestations, and as severe. What is more, the patients are as amenable or as recalcitrant to psychiatric treatment as they are to dermatologic treatment. In other words, limited areas of neurodermatitis usually occur in individuals with limited personality problems, whereas extensive chronic neurodermatitis tends to occur in those who have deep-seated and extensive personality disturbances.

Patients who have neurodermatitis are emotionally disturbed; even though they may present a noncommittal mask-like facade, or quiet, pleasant behavior, nevertheless involuntary scratching of their skin is evident. It takes little expert probing to elicit a history of emotional problems from them, since they are essentially lonely people, with a great need to communicate. On the surface, they may appear to be content with their lives; they may even deny the existence of any problems. However, it must be remembered that patients with psychosomatic manifestations are usually overly controlled. They bottle up their emotions to such an extent that they themselves are not aware of them at the time of their occurrence, nor are they usually aware of the relationship between their emotions and their skin condition. These patients are fairly bursting with repressed and suppressed emotions of trepidation, frustration, and resentment—with rage and hostility as the underlying feelings in the more severe cases. Their apparent "contentment" is really a coverup for resignation to their feelings of inadequacy and futility. In an atmosphere of friendly acceptance, they can learn to express themselves verbally, but only after much unconscious testing, by the patient, of the psychiatrist's acceptance.

Neurodermatitis occurs in adults who control or bottle up their spontaneous feelings, desires, preferences, opinions, self-assertion, ambitions and aggressions, for "judicious" or "expedient" reasons. The repressed control is due to their insatiable need to be liked, to be accepted or to remain in a secure position which they fear, consciously or unconsciously, will be threatened if they should express their true feelings, if they should assert themselves, if they should allow their ambitious and aggressive drives full rein, or if they should show their anger or jealousy. The bottling up of these emotions leaves them frustrated and unconsciously furious with those whom they are trying to

please and appease. This cause-and-effect sequence is a repetition of a pattern of childhood behavior; it occurs in those individuals who, early in life, felt intimidated, controlled, unloved, unaccepted or unworthy, and as a result have never learned how to express or assert themselves in an easy, positive manner. Furthermore, since they perpetually anticipate disapproval and/or disappointment—and, in many cases, rejection—they are chronically geared for these with defensive or aggressive behavior that induces the very rejection they anticipate. Many of these adults feel "trapped" in their life situations, whether it is in their socio-sexual relationships, in their marriage, in their work, or (as is common) in all their relationships. They cannot conceive of themselves as desirable, lovable, worthy, or successful, even though they may have a facade of self-possession, bravado, and even aggressiveness. This facade is compensatory: a cover-up or a defense against an inner feeling of anxiety arising out of their sense of inadequacy; it is like whistling in the dark when one is afraid.

Occupations and Situations that Lend Themselves to Neurodermatoses - In industry, neurodermatoses occur at all levels; they are not confined to any one economic, social, or intellectual stratum, but are dependent primarily upon such factors as the personality of the individual, the type of work, the tension, pressures, competition and timing, and above all, upon frustration and the amount of repressed anger which occurs in the interpersonal relationships within the working sphere.

Servicing Occupations - Neurodermatoses occur most often in the servicing occupations. They appear in subservient people where there is pressure of time and competition, in addition to the need to please, cater, placate, and smile at customers, fellow-workers, helpers, and superiors—all factors that play a large part in the work situation. These skin disturbances are common in waitresses, waiters, bartenders, cooks, restaurant captains, and telephone operators. The individuals feel that they must cater to their customers' whims, but they also feel beholden to and dependent on their superiors and fellow workers. They feel themselves trapped by the need to please and placate many people in many ways, a task that is invariably difficult, frustrating and even maddening, aside from the fact that it leaves little opportunity or time for one's own needs or one's self-expression.

This situation also is encountered frequently among newcomers to this country, who are readily drawn into the servicing occupations. Many have to accept menial and subservient positions that are, in a good many cases, out of keeping with their former backgrounds and education, or with their unrealistic fantasies about this country. Because of the language difficulties, the loneliness, the slum living, and the different social standards of our society, they find themselves in this unhappy position. Here again, there is the feeling of being trapped and of resenting it, but also the sense of being unable to do anything to alleviate the situation.

Junior Executives and Junior Professionals - Neurodermatitis is also found in ambitious junior executives and junior professionals, who have to bide their time and check their ambitions in order to remain within the good graces of their superiors, hoping thereby eventually to attain their ambitions, which

may or may not be in fact realized. In a driving personality, this takes restraint and the ability to compromise. When ambition and self-restraint occur in the same individual, stress and conflict are bound to arise, resulting in frustration and repressed impotent rage.

Women - A similar situation exists for women in the male-dominated working world, where women are regarded and treated as second-class citizens, no matter what their abilities or their training may be. They frequently have to compromise on accepting the inferior or subordinate position and the lower salary, without any other recourse. For the ambitious ones, who wish at the same time to retain their femininity, undue self-control, subordination, frustration, and repressed anger are common occurrences, and are frequently expressed psychosomatically.

Retirees - With the rise in the number of people forced into retirement prematurely by the present socioeconomic order and the advance in longevity, there is an increase in neurodermatitis in the older age group. These people feel displaced, lonely, useless and aimless, unimportant, unwanted, and futile. For some, retirement is the cutting off of life. Neurodermatitis in this group occurs most often in dependent, uncreative men, whose daily routinized occupations are taken away from them. They do not know how to use leisure, because they do not know how to function on their own without direction. As a result, they have no sense of belonging. They have no purpose for living. There is resentment at the social forces displacing them; at their wives, who find them underfoot; and at their children, who do not need them. This condition is most severe in aged men living alone, who have no one to communicate with, no one to share their lives and their problems, no one even to quarrel with them. Enforced idleness at this time of life lends itself to brooding about ill-health and death.

Summary

The neurodermatoses occur in those who are either unduly submissive, with resulting sullen resentment, or those who are unusually ambitious, but who dare not express it for fear of recriminations. In both situations, repressed frustration and impotent rage are produced. The skin lesions represent the acting out of the repressed frustration and impotent rage that patients fear to express consciously.

* * * * * *

Garage Ventilation*

Occupational Health Quarterly, Michigan Department of Health, 8(2): 1-4, Winter, 1962-63.

All garages require adequate ventilation for health protection; the type of ventilation system and amount of ventilation required depend on the type of garage.

*This does not represent a full report of the article.

Ventilation is required to control potential hazards involved in maintenance, servicing, and storage of automobiles and other motor vehicles with internal combustion engines.

The principal hazard common to all garages is carbon monoxide gas released from any engines regardless of the type of fuel used—whether it is gasoline, propane, or diesel fuel. There is no such thing as perfect combustion or a perfect engine; consequently, carbon monoxide gas is always released. As an example of the degree of hazard, a 100 horsepower engine, idling in a closed, unventilated garage approximately 24 feet by 24 feet by 9 feet will produce a deadly concentration of carbon monoxide gas in less than 10 minutes.

Other toxic materials are also found where automobiles are maintained and repaired. Paint solvents are not only flammable and explosive but are also toxic. Lead, generally used as a filler metal in repairing sheet metal panels, is a toxic material which can lead to gastric disorders, lead colic, and permanent physical damage if the exposure is continued at high concentrations. Lead can enter the body not only by inhalation, but also by ingestion if proper washing procedures are not followed. Tetraethyl lead can be absorbed through the skin and leaded gasoline should never be used as a "bucket solvent" to wash parts.

Mercury, a highly toxic material, is found in some metal cleaning preparations, particularly in auto body repair. Other solvents include carbon tetrachloride which never should be used under any circumstances and various "safety solvents" which have varying degrees of toxicity.

The presence of carbon monoxide gas in all garages, and exposure to paint solvents, cleaning solvents, lead, and other materials in repair garages, point up the necessity for adequate ventilation.

Following is a listing of various types of garage operations together with information about the ventilation required for proper health protection.

Service Garages: For purposes of this article, a service garage is defined as one devoted to the tune-up and mechanical repair of automobiles but does not include body repair. Ventilation is required primarily for control of carbon monoxide gas released from engines. Two types of ventilation systems are generally used, local exhaust systems for control of gases when the car is operated in the repair stall, and general ventilation systems to control gases released while cars are traveling into and out of the garage.

Such a system consists of a fan, suitable main ductwork, and flexible hoses designed to connect with the tailpipes of the automobiles. The system may be installed overhead or under the floor. Each type has its own particular merits although in recent years the under-floor system is gaining favor in new garages.

The under-floor system requires suitable ducting, usually clay tile, buried under the concrete slab during construction. Individual branch risers lead to floor fittings at the stalls and flexible hoses are connected between the floor fittings and the automobiles. They may be retractable, to be stored under the floor when not in use, or they may be demountable, usually stored

below the mechanic's workbench. The principal points to consider in installing such a system are these:

(1) It is better to oversize the floor tile rather than undersize it, since it is not readily replaceable to suit changing requirements. In the past 10 years, there has been a doubling of automobile horsepower, producing greater exhaust volumes and requiring larger duct systems. Since the tile cannot be replaced, it is better to install it as large as practical in the first place to insure that the system will be capable of keeping up with future demands.

(2) The system should have a sump and provision for easy cleaning, either by rodding, washing down, or a combination of both. Experience has shown that these systems collect floor dirt and debris, and unless they can be cleaned readily, they will soon be useless.

(3) Flexible duct connections to the automobile should be as large as practical to insure best performance. Specifications outlined for the floor tile, flexible hoses, and fan should be followed in all cases.

Overhead systems are more readily changed if the need arises. However, such a system represents a considerable investment and the garage owner should assure himself that it is designed properly in the beginning.

The plenum type system generally performs slightly better and is somewhat less costly to construct than the tapered main type of system. In the overhead system, the flexible exhaust hoses should be counterweighted to permit the mechanic to raise them above the floor when moving cars in and out of stalls.

General Garage Ventilation: Not all cars can be operated in the stalls with the flexible exhaust hoses attached. For one reason, cars must enter and leave the garage. Secondly, it is common for customers to stop their cars at the service manager's desk so that he can listen to the engine and possibly evaluate the trouble.

To control carbon monoxide gases released under these conditions, a minimum of 5000 cfm of air must be exhausted from the garage for each operating vehicle, and 500 cfm of replacement air should be supplied by a tempered make-up air unit. Unless proper air supply is provided, air flow patterns in the garage will not be controlled. In addition, there will be an undesirable rush of cold air through the service doors when they are open as well as uncomfortable leakage when the doors are closed.

Remember, all air that leaves the garage will be replaced by fresh air that must be heated in cold weather. A make-up air system in a garage performs just as comfortably and as efficiently as the fresh air heating system in an automobile. It should be pointed out that a small volume of this make-up air should be supplied to the offices since it will help in keeping garage odors out of these areas.

Repair Garages: Automobile repair garages are those which engage in structural repair of the automobile, including body and chassis work. Here, the worker may be exposed to lead, mercury, paint, and various solvents, as well as to carbon monoxide as cars enter and leave the garage. If the garage

is also engaged in tune-up and engine work, the same carbon monoxide problems exist as have already been outlined under the heading of service garages.

Painting: Proper painting procedures require use of a well-designed spray booth to insure adequate health protection, adequate fire and safety standards, and a quality finish job. Such a booth, should be a walled-off enclosure, sealed from the rest of the building, with proper wiring and lighting facilities as approved by the local building code, and the local or state fire marshal, plus adequate ventilation. Exhaust ventilation is essential to remove solvent vapor, but unless replacement air is allowed to enter the booth, proper ventilation will not result. Lengthwise ventilation is the best method of exhausting a paint booth.

Most paint booths located inside the main garage are provided with air filter doors so that air may enter the booth at one end and be exhausted at the other end. Filters are essential to insure that clean air enters the booth. When the painting is done in a separate building, however, it is undesirable to have winter air leaking into the booth from outside, and it is vital that there be a separate make-up air system for the paint booth in order to insure balanced, controlled ventilation.

Body Finishing: As mentioned earlier, use of lead is a potential severe hazard in repair of body panels. Generally speaking, the worker's exposure is not critical during the application of lead; however, if proper finishing methods are not used, the danger of lead poisoning exists. To smooth the leaded contour, only hand filing methods must be used unless a special lead grinding booth is installed for this purpose. It should be noted that in the automotive industry where bodies are manufactured, lead grinding is done only in specially constructed and ventilated booths with the worker wearing special clothing including a full face helmet with a separate clean air supply. There is no alternative to adequate protection in the grinding of lead, therefore, hand filing methods are recommended for garages.

Newer methods include the spraying of molten lead onto a body panel or fender which has been previously prepared with a timing paste or solution containing mercury. This operation can be conducted only in a ventilated booth and the worker must be provided with an air supply helmet assuring him of safe, healthful air to breathe.

As noted, various "bucket solvents" are also hazardous. Carbon tetrachloride must never be used under any circumstances and the use of leaded gasolines can result in excessive skin absorption of tetraethyl lead by the worker in addition to the obvious fire hazard. While no solvent can be recommended as absolutely safe, some can be used with caution. Included in this group are the so-called high-flash solvents such as stoddard solvent and oleum spirits, and such materials as methylchloroform and methylene chloride, which are nonflammable.

General ventilation for the ordinary repair garage can be obtained through operation of the spray booth fan in order to provide adequate air flow through the building. To replace the exhausted air, make-up air should be provided as indicated for service garages. Proper distribution of the make-up

air will assist in providing good general ventilation of the garage area and may eliminate the use of additional roof exhausters or wall fans. This general ventilation will aid in reducing concentrations of carbon monoxide gas released from automobiles that enter and leave the building.

* * * * * *

The Growing Importance of Industrial Hygiene*

John D. Harper, Vice-President, Aluminum Company of America, 1501 Alcoa Building, Pittsburgh 19, Pa. Arch Environ Health 6(3): 21-23, March 1963.

Industrial hygiene today, concerned as it is with man, animals, property, and vegetation, is awesome in scope and challenging in responsibility. Its pattern over the years has been transformed from one of curative medicine to that of prevention of occupational illness, injury, and damage.

With changing times and the dynamic growth of industrial, political, economic, and social life, industrial hygiene needs have become very complex, and have evolved into matters of grave responsibility for anyone who has created employment. Today, thousands of people work together in concentrated areas; machinery and materials of production are complex and ever changing. A multitude of laws and rulings regulate employer and employee, and the whole atmosphere of industrial activity is under the constant scrutiny of government and public alike.

The need for an industrial hygiene program becomes even more evident in the light of the demands made by industry's new environment, the medically enlightened but apprehensive public, the broadened compensation rulings for medical disorders and their effect on the employer, and the increased union and governmental activities in occupational medicine and hygiene.

Success in this field requires that management fully understands the scope and importance of industrial hygiene, the need for a well-planned program, and the benefits which can be achieved. Every such program should have realistic, attainable goals spelled out in terms of better employee and community relationships, actual savings in dollars and cents, and the proper fulfillment by a corporation of its role as good citizens.

The scope of a program of industrial hygiene can be tailored by using as guidelines the number of employees involved, the nature of the work, the availability of qualified medical hygiene personnel, and the time and money alloted to the program.

A most important primary step is for management to make its endorsement of an industrial hygiene program known throughout the company so that all workers are aware of the interest and support backing the effort. Next, the atmosphere and contacts which form the over-all environment created by

* This does not represent a complete report of the article.

the very existence of the work site must be examined and understood. Within a plant there are many potential environmental health hazards ranging from light, toxic chemicals, noise, temperature, and vibration to the very important psychological relationships existing among employees.

Industry's responsibility in our culture is not confined to the welfare of people at the work site alone. Today, there is concern with everything emanating from the plant with which people may be in contact. Industry must realize that anything emitted into the air and the water, as well as products which emerge from the plant, may carry potential health hazards. Thousands of difficulties have arisen from smoke and fumes, from water pollution, and from other atmospheric contaminants and elements, resulting from industrial production.

While such a wide scope of responsibility is staggering, it presents no challenge that cannot be overcome by a management willing to take direct action wherever possible while overseeing the job to fulfillment. This requires a constant surveillance of man and his environment. The environmental factors must be recognized, measured, and thoroughly understood and, where necessary, controlled and changed to meet adequate health standards. To do this, it is necessary to have qualified industrial hygienists oversee the program. The industrial hygienist's job is to study all aspects of every potential environmental health hazard. Working closely with the plant doctor, nurse, safety engineer, production people, and other personnel whose jobs are associated with occupational health problems, the industrial hygienist must constantly maintain a 2-way channel of communication with all of them. The industrial hygienist should collect and analyze the thinking of others and make sound recommendations to management based on such over-all knowledge and experience.

Perhaps the heart of an industrial hygiene program in the preventive sense is the building of a constant awareness of existent potential hazards. Because everyone at a work site is involved with atmosphere and contacts, this awareness can only be built up through mass employee communication. Industrial hygiene should be stressed in training programs, house organs, letters to employees, meetings, bulletin boards, and by any other communication methods used to reach the various levels of company personnel.

The attitude of every employee is conditioned by the way in which he gets along with others and especially with those who supervise his work. Healthy attitudes built on happy relationships can do much to improve the working atmosphere for all while lessening the threat of environmental health hazards. Management is well advised to train its supervisory people in human relations.

Every enlightened management should scrutinize industrial hygiene aspects very closely before making decisions such as the selection of new plant sites, changes in plant processes, and additions to and relocations within present plant areas. It is of utmost importance that all problems regarding environment and contact be referred to properly qualified personnel who should be authorized to handle them.

Study, plan, and action are as important outside of the plant and in the community as they are at the work site. A constant watch for actual and potential trouble spots with strong concentration on preventive measures is the key. Out-of-plant problems offer many opportunities for cooperative research where other companies, industries, and foundations are linked together in a common interest. Such cooperative ventures are especially helpful for companies which lack the money and manpower to cope with problems on their own.

There are in existence several governmental agencies specifically set up to work in the field of industrial hygiene. Many of these agencies have already done extensive and costly research and can lend competent help and sage advice to industry. Certainly their resources should be thoroughly considered and utilized to the fullest extent. While considering government as a partner in this work, most of the standards by which a company's industrial hygiene program must operate up to now have been government-made. These rules are established primarily by legislation, commission ruling, and court decision. To maintain a position of sovereignty with the power of checks and balances against the ever increasing rule of government, it is essential to work out problems on an individual basis or in concert with other private interests. Failing this, authority will be surrendered to the government, and the future will see a centralized control in which management has little voice.

There are several ways of helping to insure private enterprise in this field. Since so many rules are created by legislators and commissions, it is extremely important that industry keep such authoritative people fully informed so that whatever standards are set will be realistic and based on firsthand knowledge of the problems involved. Wherever possible, industry should encourage its knowledgeable people to serve on commissions working for the benefit of industry. The voice of industry can be heard in this way and its interests well represented.

In the days ahead—when all signs seem to point to an even greater growth of industry and technology, the forces of environment and contact threaten to become even more complex and challenging. One evidence of this growing complexity is seen in the health and safety clause which is now being written into many union contracts. In essence, this clause gives a worker the right to walk off a job if he feels that working conditions are unsafe or unhealthy. Thus, it strongly behooves management to plan for a healthy wholesome working environment. If management does not, the government will.

If no industrial hygiene program exists, industry has no rapport with its employees or with the community in this most important phase of relationship—health and its preservation. Without a sound plan, compensation hazards mount with consequent rising losses in time, money, and morale.

An employer has an obligation to provide a safe and healthful atmosphere for those he hires and should be solicitous toward the effect his working site has on the surrounding community. There are many more factors in this wide scope of contact and environment. Industrial health demands a plan of action, challenges all of industry to accept a distinct obligation, and warns that if it is forsaken the price of default is rigid governmental control.

RESERVE SECTION

Military Symposium to Be Held at AMA Meeting

The Annual Meeting of the American Medical Association will be held at Atlantic City, New Jersey, during the period 17-19 June 1963. A Military Symposium will be held in conjunction with this meeting and eligible inactive Naval Reserve Medical Department officers may earn retirement point credits for attendance provided they register with the military representative present.

* * * * * *

Active Duty for Training During Fiscal Year 1964

The following training courses represent active duty for training authorized for inactive duty Naval Reserve Medical Department officers and enlisted personnel during fiscal year 1964, as published in Bureau of Naval Personnel Instruction 1571.4I.

Recognition and Treatment of Diving Casualties

U.S. Naval School,
Deep Sea Divers,
U.S. Naval Station
(Washington Navy Yard Annex)
Washington, D.C.

15 July 1963

Description: Two week course offering didactic training in underwater physiology and in the recognition and treatment of casualties associated with any kind of diving. Instruction includes lectures and demonstrations of the equipment of the Deep Sea Divers School and Experimental Diving Unit.

Eligible Personnel: 2105, 2305 -- Male only

Quotas: Quotas have been authorized for the 1st, 3rd, 4th, 5th, 6th, 8th, 9th, 11th, 12th, and 13th Naval Districts.

Tissue Bank Training Course

U. S. Naval Medical School
National Naval Medical Center
Bethesda, Maryland

1st Monday of July and October 1963
1st Monday of January and April 1964

Description: This course provides orientation in the operation and administration of a tissue bank. It includes indoctrination in the methods of tissue procurement; storage and dispensing; tissue culture; tissue chemistry; processing excised tissue; and allied short and long-term research projects in the tissue culture and tissue chemistry fields. It also includes indoctrination in the medico-legal aspects of homo-transplantation, the procedure for obtaining permission for tissue donations, familiarization with the operation of the Tissue Bank Registry, and all other administrative practices associated with tissue banking.

Eligible Personnel: 2105

Quotas: Quotas have been authorized for the 1st, 3rd, 4th, 5th, 6th, 8th, 9th, 11th, 12th, and 13th Naval Districts.

Field Medicine

Field Medical Service School
Marine Corps Base
Camp Pendleton, California

15 July 1963
29 July 1963
3 Sept 1963
16 Sept 1963
14 Oct 1963
28 Oct 1963
25 Nov 1963
27 Jan 1964
17 Feb 1964
9 Mar 1964
30 Mar 1964
20 Apr 1964
4 May 1964
25 May 1964
8 Jun 1964

Field Medical Service School
Marine Corps Base
Camp Lejeune, North Carolina

29 Jul 1963
9 Sep 1963
21 Oct 1963
2 Dec 1963
27 Jan 1964
9 Mar 1964
20 Apr 1964
1 Jun 1964

Description: Lectures, demonstrations, and practical exercises to familiarize Reserve medical personnel with problems usually confronted and

techniques to be employed in the application of field medicine. One week is devoted to classroom work and one to field work.

Eligible Personnel: 2105, 2205, 2305, 8175, 8185, Group X, Group X1, Male only

Quotas: Quotas for Camp Pendleton, Calif., have been authorized for the 9th, 11th, 12th, 13th, and 14th Naval Districts. Quotas for Camp Lejeune, North Carolina have been authorized for the 1st, 3rd, 4th, 5th, 6th, 8th, and 9th Naval Districts.

Casualty Treatment Training Course

U. S. Naval Hospital Corps School Great Lakes, Illinois	U. S. Naval Hospital Corps School San Diego, California
22 Jul 1963	22 Jul 1963
12 Aug 1963	12 Aug 1963
9 Sep 1963	9 Sep 1963

Description: Specific training in the disciplines of ABC warfare and techniques of management of mass casualties

Eligible Personnel: Group X, Pay Grade E-4 and above

Quotas: Quotas for Great Lakes, Illinois, have been authorized for the 1st, 3rd, 4th, 5th, 6th, 8th, and 9th Naval Districts. Quotas for San Diego, Calif., have been authorized for the 9th, 11th, 12th, and 13th Naval Districts.

* * * * * *

DEPARTMENT OF THE NAVY
U. S. NAVAL MEDICAL SCHOOL
NATIONAL NAVAL MEDICAL CENTER
BETHESDA 14, MARYLAND

OFFICIAL BUSINESS

Permit No. 1048

POSTAGE AND FEES PAID
NAVY DEPARTMENT